

P-5.5 Illustrate the interaction of light waves with optical lenses and mirrors by using Snell's law and ray diagrams.

Revised Taxonomy Level 2.2-B Exemplify (illustrate) conceptual knowledge

In physical science students

- ❖ “Summarize reflection and interference of both sound and light waves and the refraction and diffraction of light waves.” (PS-7.6)
- ❖ Draw ray diagrams for a prism and for a converging and diverging lenses,
- ❖ Do not find the focal point or solve problems using Snell's law.

It is essential for students to

- ❖ Solve problems using Snell's law
- ❖ Use ray diagrams to illustrate the path of light and to find the location and size of the image:
 - as it passes through convex and concave of lenses
 - as it reflects off convex and concave mirrors

Assessment

The verb exemplify (illustrate) means to find a specific example or illustration of a concept or principle, therefore the major focus of assessment will be for students to give examples that show that they understand the path of light as when it encounters various lenses and mirrors. Because the indicator is written as conceptual knowledge, assessments should require that students understand the “interrelationships among the basic elements within a larger structure that enable them to function together.” In this case, assessments must show that students understand how the shape of the device determines the nature of the image and the path of the light.